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*Chrono*

31 October 1983

25X1 MEMORANDUM FOR: [REDACTED]  
OP/PA&E/PMCD

25X1 FROM: [REDACTED]  
Operations Research Analyst/HRPS

SUBJECT: Technical Attrition Study

1. HRPS was requested to undertake a study of the attrition rates and reasons that employees in certain technical positions were separating from the Agency. This study examines a five and one-half year period from 1978 to mid-1983 of the technical occupational codes listed in attachment 1. A statistical analysis of the data indicates some interesting differences in the reasons employees leave the Agency in these positions relative to the rest of the Agency.

2. Comparing the "Reason for Separation" distribution across the entire five and one-half year period, the overall percentage rate in each category remains relatively stable. The following table compares the overall separation reason percentage of technical employees with the overall rates of the total Agency.

|           | FIRED | JOB FACTOR | PERSONAL FACTOR | RETIREMENT | UNKNOWN |
|-----------|-------|------------|-----------------|------------|---------|
| AGENCY    |       |            |                 |            |         |
| TECHNICAL |       |            |                 |            |         |

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The average individual who works for the Agency will more than likely leave because of retirement. The average technical employee, however, will leave for reasons of job dissatisfaction rather than retirement. Overall separation of technical employees accounts for approximately ten percent of all separations over the time frame of the study.

Reason by Occupation:

3. Examination of specific areas is particularly revealing. Of the technical job categories included, separation for reason of job dissatisfaction accounts for the largest percentage with 60 percent for computer systems employees and 75 percent for mathematicians. Only in the engineer/electronic specialist category was job factor a relatively low 17 percent and retirement the highest with 59 percent. The data available for the current year follows a pattern similar to the previous years examined.

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~~SECRET~~Reason by Age Group:

4. As might be expected, those individuals in their 20's and 30's separated because of job factors first and then personal factors. This is generally the pattern of those in their 40's as well. Of the ☐ employees fired between 1978 and mid-1983, most were in their 50's, which probably reflects the historical inclusion of "discontinued service" retirements in the fired category. The study reveals the older an employee is, the more likely he will be fired. Not surprising, however, is that retirement was the major reason for separation for those in their 50's and older. Employees who separated for an unknown reason were spread with equal frequency from all age groups.

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Reason by Sex:

5. Females made up only seven percent of the employees who separated from the technical positions examined. Of these, the separation reasons and percentages closely resemble those for males.

Reason by Length of Employment:

6. An individual in a technical category is clearly more likely to separate from the Agency within the first ten years of employment, with the chances of leaving decreasing with each passing year. It follows that those with greater than ten years of service are very likely to remain until retirement.

Reason by Directorate:

7. The DDS&T and DDA are the major employers of individuals in technical jobs, comprising 48 percent and 35 percent respectively. The DDS&T had 42 percent of those who separated for reason of job factor, and 28 percent of those who left for retirement. The DDA fared a little better with 30 percent leaving for job factor and 33 percent for retirement. Although the DDI lost only 15 percent of these employees, job factor accounted for 56 percent of their separations from the Agency versus 15 percent leaving for retirement.

Reason by Grade:

8. Retirements among technical employees were evenly spread among GS-11 to GS-15 employees. Generally, all other reasons for separation show an even spread by grade, with fewer employees leaving when in a position which had immediate headroom. For example, GS-08 and GS-10 employees separate at lower rates, presumably because they are in GS-09 and GS-11 slots respectively.

Grade by Sex:

9. Nearly 75 percent of males who separated were in grades GS-11 to GS-15. In the small group of females who left the Agency, the spread was fairly even throughout a GS-08 to GS-13 range.

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10. Separations occurred at different grade levels for each of the technical categories examined over the five and one-half year period. Nearly 85 percent of the Engineering Tech and Electronic Tech employees separated while at the GS-07 to GS-09 level. Those employees listed under the Computer Systems category separated with a fairly even distribution from the GS-11 to the GS-15 level. The Engineering Specialists and Electronic Specialists separated predominately at the GS-11 and GS-12 levels. Lastly, those in the Physical Science category separated predominately from the GS-13 to GS-15 level, followed by GS-11 to GS-12.

Summary:

11. In summary, a statistical analysis of the technical attrition data reveals significant differences in separation reasons for technical employees, as compared to the overall Agency. The fact that the technical separation percentage, because of job factor, is twice that of the overall Agency, would seem to indicate either a high degree of job dissatisfaction, a highly competitive market for these employees, or both. The greatest losses in the technical categories reviewed in this study were in physical science (28%), engineering (26%), and computer systems (22%). The attached tables provide further detail for each of the areas considered in this study.



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Attachments

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Defined Occupational Groups

| <u>GROUP</u>                                           | <u>OCCUPATIONAL CODES</u>                                                                             |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| 1. Engineers                                           | GS-0800.00 - GS-0899.99                                                                               |
| 2. Engineering Tech and<br>Electronic Tech             | GS-0802.01<br>GS-0856.02                                                                              |
| 3. Engineering Specialist and<br>Electronic Specialist | GS-0802.02<br>GS-0856.04                                                                              |
| 4. Physical Scientists                                 | GS-1301.00 - GS-1301.99<br>GS-1310 - GS-1310.99<br>GS-1320.02 - GS-1320.13<br>GS-1321.00 - GS-1321.99 |
| Physical Science Tech                                  | GS-1311.01                                                                                            |
| 5. Mathematician                                       | GS-1502.02                                                                                            |
| 6. Computer Scientists                                 | GS-1550.01                                                                                            |
| Computer Systems                                       | GS-0330.01 - GS-0330.04<br>GS-0334.01 - GS-0334.09                                                    |

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